SAFETY DATA SHEET

Emerald® JR

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Emerald® JR
Product code: 90000895
Product Use: Acid Fountain Solution for Sheet Fed Presses.

Manufactured by:
FUJIFILM Hunt Chemicals U.S.A., Inc.
40 Boroline Road
Allendale, NJ 07401-0320

Distributed in Canada by:
FUJIFILM Canada, Inc.
600 Suffolk Ct.
Mississauga, Ontario L5R 4G4

Distributed Internationally by:
FUJIFILM Hunt Chemicals U.S.A., Inc.
40 Boroline Road
Allendale, NJ 07401-0320

Distributed in the USA by:
FUJIFILM North American Corporation,
Graphic Systems Division
200 Summit Lake Drive
Valhalla, NY 10595-1356

SDSs are available at the following website(s):
http://www.fujifilmusa.com/msds

Company Phone Number:
U.S.A: 800-473-3854 Canada: 800-263-5018

Emergency Telephone:
Transport-CHEMTREC Inside NA: 800-424-9300
Transport CHEMTREC Outside NA: 703-527-3887
Transport-CANUTEC Inside Canada: 613-996-6666
Medical Emergency (24 hour): 877-935-7387

E-mail:
EHS@fujifilm.com

2. HAZARDS IDENTIFICATION

Classification

Serious eye damage/eye irritation: Category 2

GHS Label elements, including precautionary statements

Warning

Hazard Statements

__________________________________________________________________________________________
Causes serious eye irritation

Precautionary Statements

Prevention
Wash face, hands and any exposed skin thoroughly after handling
Wear eye/face protection

Response
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention

Storage
Not applicable

Disposal
Not applicable

Hazards not otherwise classified (HNOC)
Not classified

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYLENE GLYCOL MONOBUTYL ETHER</td>
<td>111-76-2</td>
<td>5-10%</td>
</tr>
<tr>
<td>AMMONIUM NITRATE</td>
<td>6484-52-2</td>
<td>1-5%</td>
</tr>
<tr>
<td>MALIC ACID</td>
<td>6915-15-7</td>
<td>1-5%</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First aid measures for different exposure routes

General advice
Immediate medical attention is required. If symptoms persist, call a physician.

Eye contact
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Skin contact
Wash off immediately with plenty of water. If skin irritation persists, call a physician.

Inhalation
Move to fresh air. If symptoms persist, call a physician.

Ingestion
If swallowed, do not induce vomiting - seek medical advice.

Protection of First-aiders
Use personal protective equipment. Avoid contact with skin, eyes or clothing.
Most important symptoms/effects, acute and delayed

May cause redness, itching, and pain.

Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

None known.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Hazardous Combustion Products


Explosion Data

Sensitivity to Mechanical Impact none

Sensitivity to Static Discharge none

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid contact with skin, eyes or clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains.

Methods and materials for containment and cleaning up

Methods for Containment

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling
Wear personal protective equipment. Avoid contact with skin, eyes or clothing. Avoid breathing vapors or mists. Ensure adequate ventilation.

**Conditions for safe storage, including any incompatibilities**

Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

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### 8. EXPOSURE CONTROLS/PERSOINAL PROTECTION

**Control parameters**

**Exposure Guidelines**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
<th>AIHA - Workplace Environmental Exposure Levels (WEELs) - TWAs</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYLENE GLYCOL MONOBUTYL ETHER</td>
<td>TWA: 20 ppm</td>
<td>TWA: 50 ppm (vacated) TWA: 25 ppm (vacated) TWA: 120 mg/m³ (vacated)</td>
<td>IDLH: 700 ppm TWA: 5 ppm TWA: 24 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

**Exposure controls**

**Engineering Measures** Ventilation systems

**Individual protection measures, such as personal protective equipment**

**Eye/Face Protection** Tightly fitting safety goggles.

**Skin and body protection** Wear protective gloves/clothing.

**Respiratory protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**General Hygiene Considerations** When using do not eat, drink or smoke. Take off contaminated clothing and wash before reuse. Regular cleaning of equipment, work area and clothing is recommended.

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Green</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>3.8</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.07</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt; 201 °F / &gt; 94 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting point / melting range</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td>Not available</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility</td>
<td>completely soluble</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not available</td>
</tr>
<tr>
<td>VOC (lb/gal)</td>
<td>1.71</td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>Not available</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild</td>
</tr>
<tr>
<td>Physical State @20°C</td>
<td>Liquid</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>Not available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>&gt; 212 °F / &gt; 100 °C</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>Not available</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Density</td>
<td>Not available</td>
</tr>
<tr>
<td>VOC (g/l)</td>
<td>205.11</td>
</tr>
</tbody>
</table>

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### 10. STABILITY AND REACTIVITY

**Reactivity**

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Stable under recommended storage conditions.

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

None under normal processing.

**Conditions to Avoid**

Excessive heat. Freezing. This product contains an ammonia compound. Do not allow this solution to come in contact with household or industrial bleaches (Sodium Hypochlorite). Mixing of these chemicals can result in the release of hazardous or toxic gases. Inhalation of these gases may cause severe respiratory irritation.

**Incompatible Materials**


**Hazardous Decomposition Products**

None known.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

**Product Information**

**Acute toxicity**

<table>
<thead>
<tr>
<th>Route</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>Inhalation of vapors in high concentration may cause irritation of respiratory system.</td>
</tr>
<tr>
<td>Eyes</td>
<td>Irritating to eyes. May cause redness and tearing.</td>
</tr>
<tr>
<td>Skin</td>
<td>Non-irritating during normal use.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.</td>
</tr>
</tbody>
</table>

**Component Information**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>LC50 (lethal concentration)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYLENE GLYCOL MONOBUTYL ETHER</td>
<td>470 mg/kg (Rat)</td>
<td>400 mg/kg (Rabbit)</td>
<td>450 ppm (Rat) 4 h</td>
</tr>
<tr>
<td>AMMONIUM NITRATE</td>
<td>2217 mg/kg (Rat)</td>
<td>2270 mg/kg (Rat)</td>
<td>&gt; 88.8 mg/L (Rat) 4 h</td>
</tr>
</tbody>
</table>

**Information on toxicological effects**

No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

<table>
<thead>
<tr>
<th>Effect Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irritation</td>
<td>Irritating to eyes.</td>
</tr>
<tr>
<td>Corrosivity</td>
<td>No information available.</td>
</tr>
<tr>
<td>Sensitization</td>
<td>No information available.</td>
</tr>
<tr>
<td>Mutagenic Effects</td>
<td>No information available.</td>
</tr>
<tr>
<td>Reproductive Toxicity</td>
<td>No information available.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>None known.</td>
</tr>
</tbody>
</table>

**STOT - single exposure**

No information available.

**STOT - repeated exposure**

No information available.
Target Organ Effects
Blood, Central nervous system (CNS), Eyes, Hematopoietic System, Kidney, Liver, Respiratory system, Skin.

Aspiration hazard
No information available.

Numerical measures of toxicity - Product Information
The following values are calculated based on chapter 3.1 of the GHS document.

<table>
<thead>
<tr>
<th>ATEmix (oral)</th>
<th>5507 mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATEmix (dermal)</td>
<td>13358 mg/kg mg/l</td>
</tr>
<tr>
<td>ATEmix (inhalation-dust/mist)</td>
<td>19.7 mg/l</td>
</tr>
</tbody>
</table>

ATE: Acute toxicity estimate

12. ECOLOGICAL INFORMATION

Ecotoxicity
Contains no substances known to be hazardous to the environment or that are not degradable in wastewater treatment plants.

Persistence and degradability
No information available.

Bioaccumulation

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Octanol Water Partition Coefficient (log pow)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYLENE GLYCOL MONOBUTYL ETHER</td>
<td>0.81</td>
</tr>
<tr>
<td>AMMONIUM NITRATE</td>
<td>-3.1</td>
</tr>
</tbody>
</table>

Mobility
No information available.

Other adverse effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods
Dispose of in accordance with local regulations.

Contaminated packaging
Do not re-use empty containers.
14. TRANSPORT INFORMATION

DOT Not regulated
TDG Not regulated
MEX Not regulated
ICAO Not regulated
IATA Not regulated
IMDG Not regulated
ADR/RID Not regulated
ADN Not regulated

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA</td>
<td>Yes</td>
</tr>
<tr>
<td>DSL/NDSL</td>
<td>No</td>
</tr>
<tr>
<td>PICCS</td>
<td>No</td>
</tr>
<tr>
<td>EINECS/ELINCS</td>
<td>No</td>
</tr>
<tr>
<td>ENCS</td>
<td>No</td>
</tr>
<tr>
<td>IECSC</td>
<td>No</td>
</tr>
<tr>
<td>KECL</td>
<td>No</td>
</tr>
<tr>
<td>AICS</td>
<td>No</td>
</tr>
</tbody>
</table>

*Yes - All component(s) of this product are included or are exempt from listing on the inventory.

*No - Indicates the component(s) of this product are either not listed or have not been determined to be listed on the inventory.

U.S. Federal Regulations

TSCA Sections 4, 5 and 12(b)
This product does not contain any chemicals regulated by TSCA Sections 4, 5 or 12(b).

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>SARA 313 - Threshold</th>
<th>Weight-%</th>
</tr>
</thead>
</table>

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<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYLENE GLYCOL MONOBUTYL ETHER</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>AMMONIUM NITRATE</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

### SARA 311/312 Hazard Categories
- **Acute Health Hazard**: Yes
- **Chronic Health Hazard**: no
- **Fire Hazard**: no
- **Sudden Release of Pressure Hazard**: no
- **Reactive Hazard**: no

### Clean Water Act
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

### CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

### U.S. State Regulations

#### California Proposition 65
This product does not contain any Proposition 65 chemicals.

#### U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYLENE GLYCOL MONOBUTYL ETHER</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>AMMONIUM NITRATE</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

### International Regulations

#### Canada - NDSL
This product does not contain any NDSL chemicals.

#### Mexico - Grade
Slight risk, Grade 1

### Mexico - Carcinogen Status and Exposure Limits

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Carcinogen Status</th>
<th>Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYLENE GLYCOL MONOBUTYL ETHER</td>
<td></td>
<td>Mexico: TWA 26 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mexico: TWA 120 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mexico: STEL 75 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mexico: STEL 360 mg/m³</td>
</tr>
</tbody>
</table>

### Other Regulations
No information available

### 16. OTHER INFORMATION
Prepared By
FUJIFILM Environment, Health and Safety, phone: 800-473-3854

Revision Date
01-Dec-2015

Revision Note
No information available

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

end